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UNITED STATES PATENT APPLICATION

of

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for

TOY WITH RELEASABLE ADHESIVE FEATURE

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Title of Invention

TOY WITH RELEASABLE ADHESIVE FEATURE

Cross-Reference to Related Applications

[0001] This application is a continuation-in-part application of co-pending U.S. Patent Application No. 10/736,182 for a "Toy with Sticky Layer," filed December 15, 2003.

Field of the Invention

[0002] The present invention relates to a toy that allows for releasable adherence of accessories. More specifically, the present invention relates to a toy with an adhesive component that allows for releasable adherence and repeated release and re-attachment of accessories and that is renewably adhesive by washing.

Background of the Invention

[0003] Stick-on toys, such as paper dolls and stick-on activity boards and books, are known. Such toys use various means, such as fold-over tabs and stickers, to attach items, such as clothing or other accessories, to toys. Typically, stick-on toys attach items to a doll or activity board by providing a glue or an adhesive, typically on one surface of the item to be attached. Often these items are stickers, designed for one-time use or may be removed and reattached until they lose stickiness.

[0004] Items or the like are often designed for one-time application provided with adhesive or glue thereon and cannot be removed once placed on a paper doll or activity board. The toy is limited to one-time use and cannot be further modified by the user. Toys with stickers or the like with a glue or an adhesive designed to be reusable are limited in their ability to be reused to the extent they remain sticky and/or dirt-free. As the adhesive or glue likely collects dirt and lint on its adhesive surface and/or as the adhesive wears off after continual use, reusable stickers are problematic in that their adhesive ability eventual wanes and fails. As such, these toys have a limited life, with items unable to attach to the toy in the first place or to remain attached to the toy due to an inevitable loss of stickiness.

[0005] Other toys achieve adhesion by static cling. For instance, toys using static cling vinyl, such as Colorforms® brand which can only adhere flat, light-weight items of the same vinyl material to a flat static cling surface. Static cling vinyl is a special formulation of polyvinyl chloride (PVC) to which a large amount of plasticizer has been added, making it very pliable. Static cling vinyl is considered a "low tack" adhesive as it does not aggressively adhere. When the vinyl is applied to a clean, smooth, glossy surface, it adheres easily. It can be removed and re-applied nearly indefinitely without leaving behind an adhesive residue. Static cling vinyl is not really an adhesive, but it acts as one when the vinyl is charged using an electrostatic process that provides an attraction to an oppositely-charged surface such as glass. These static cling vinyl film items must be thin and lightweight in order to static cling adhere to a flat, clean glossy surfaces, such as glass or specially coated activity boards, and are limited as such to one dimensional or planar applications. Further, they are likely limited to horizontal applications as otherwise gravitational force will overcome the static

cling adhesion. In order to be used in vertical application, the static cling vinyl stickers must be extremely lightweight in order for adhesion to withstand a gravitational pull.

[0006] Other stick-on display boards and toys achieve adhesion by cohesive force between two interposing surfaces both of which are coated with fabric, felt, nap, flannel, or other material such that their surfaces are fibrous, rutted and/or bumpy such that the two surfaces can "grab" one another and attach by cohesive force.

[0007] For instance, U.S. Patent No. 4,403,000 to Gates includes a display object and display item, both of which are coated with flock, a crushed fibrous material such as rayon. Gates' flock-coated display object and flock-coated display items are removably secured by cohesive force as the two flock-coated surfaces are coupled and their fibers intermesh and interlock. Gates notes that traditional felt or flannel boards are deficient in that they are limited to one-dimensional, planar applications, and limited to use in a horizontal position as there is not sufficient cohesive force between two surfaces in vertical position to withstand the pull of gravity. Hence, Gates seeks to overcome these deficiencies by providing a display object and display item (each having and attaching to one another other at) non-smooth surfaces coated with flock. (The surface of the display object and the back of the display item are coated with flock using a nondrying adhesive). While Gates employs an adhesive to attach the flock, it also leaves small areas of non-drying adhesive object against which fibers of the display will stick. In these areas, the flock produces a barrier of which only a portion of the ends of the nap contact the adhesive of the opposing display item it, in order to lessen the cohesive force. Hence, Gates teaches away

from direct adhesive contact. Gates requires an intermeshing of fabric particles between two unsmooth surfaces (i.e. contact of the adjacent flock-coated surfaces) as well as contact of nap of one unsmooth surface to adhesive of second surface, to achieve both adhesion and removability. Additionally, Gates requires on both display object and display item being covered with flock and limits what can be attached (only flocked-covered display items) to a display object according to its disclosure. Gates is limited to the types of material that toy can receive can be employed, that is, only those that are flock-coated and non-smooth. Gates requires both display object and item to be coated with fibers to provide two non-smooth surfaces to engage one another.

[0008] Stick-on toys and other stick-on items as described herein and known in the art have limitations in their applications, with items having either one or two dimensions. Further, these stick-on toys require an interaction of a relatively large portion of flat surface area between items to be removably adhered.

[0009] The demand for more sophisticated toys grows, and there exists a need to develop better methods of attaching, removing and re-attaching items to a variety of sophisticated toys, and ensuring a repeated ability to adhere and remove sophisticated items. Further, there remains a need to allow toys, specifically adhesive toys, to get dirty while not impairing their adhesive function.

Summary of the Invention

[0010] The present invention relates to a toy comprising at least one cutout having an at least partially printed surface completely covered by a

washable and at least semi-transparent layer for releasably adhering accessories related to the printed surface.

Brief Description of the Drawings

[0011] FIG. 1 is a frontal view of a toy in accordance with one embodiment of the present invention.

[0012] FIG. 2 is a side view of the toy shown in FIG. 1.

[0013] FIG. 3 is a perspective view of a toy in accordance with the present invention, having a different shape from the toy shown in FIG. 1.

[0014] FIG. 4 is a perspective view of multiple toys shown in FIG. 3 bound together to form a book.

[0015] FIG. 5 is a perspective view of a toy in accordance with another embodiment of the present invention.

[0016] Fig. 6 is a perspective view of the embodiment shown in FIG. 5.

Detailed Description Of The Drawings

[0017] The present invention provides a toy that at least a portion of which releasably adheres to various items without losing adhesive ability over time, allowing for repeated adhesion, removal, and reattachment of items to the adhesive portion of the toy.

[0018] The present invention has an adhesive portion, whether for instance at least portion of the toy is molded of the adhesive itself or an adhesive layer is disposed upon a surface of at least a portion of the toy. The adhesive portion comprises an adhesive with several properties.

[0019] Generally, an adhesive is a compound that adheres or bonds two items together. Generally, a "temporary adhesive" is designed to repeatedly or easily stick and unstuck. A temporary adhesive may be "pressure sensitive." "Pressure sensitive adhesive" (PSA) is a term known in the art used to designate a distinct category of temporary adhesives which in dry form (solvent/water free) are aggressively and permanently tacky at room temperature and that firmly adhere to a variety of dissimilar surfaces upon mere contact without the need of more than finger or hand pressure. These products require no activation by water, solvent, or heat in order to exert a strong adhesive holding force toward such materials as paper, plastic, glass, wood, cement, and metal. They have sufficient cohesive holding power and elastic nature so that, despite their aggressive tackiness, they can be handled with the fingers and removed from smooth surfaces without leaving an adhesive residue or deposit. Typically, adhesive that is pulled away from the surface to which it is applies may remain or leave a residue on the surface to which it has been applied once it is removed. "Pressure sensitive adhesive" is a term of art noting a special class of adhesives that provide good adhesion to a surface while at the same time allow for ease of pulling or peeling away from and removing from the surface to which they stick, not producing any damage to or leaving a visible layer of adhesive polymer on such a surface.

[0020] Such pressure sensitive adhesives may be employed in the present invention. The adhesive employed the present invention is reusable, in the sense that it may repeatedly adhere items (placed or pressed thereto or thereon by the user), and repeatedly release items (when they are pulled or peeled away by the user) without losing it's adhesiveness for next use.

[0021] Additionally, the adhesive employed in the present invention may be washable such that washing restores its adhesiveness. Hence, if unwanted items such as dust, dirt, lint and the like, have attached to the adhesive, and hence, affected its adhesiveness or stickiness, simply washing the surface of the adhesive, removing the dust, dirt, lint, etc will return it to its original stickiness. Washing away dirt, dust, lint, and the like does not likewise remove the adhesive or detract from its adhesive capability. In this sense, the adhesive of this toy has a strong adhesive ability, and at the same time, an unlimited life span, a drastic improvement in the field of stick-on toys.

[0022] The adhesive is employed in the present invention to create an adhesive portion or layer which is "smooth," in that its adhesive surface is substantially continuous, uniform, and even-finished, such that it is without any additional non-adhesive materials, such as fibers, permanently coated and/or fixed in and/or on the adhesive playing a part along with the adhesive in providing the desired adhesion or stickiness to the adhesive layer or portion. Hence, adhesive layer or portion is not rough, rudded, reticulated, uneven or the like at its exposed adhesive surface. It can adhere to virtually any items, whether likewise smooth items or otherwise bumpy, rough, reticulated or the like.

[0023] Adhesive may be any suitable reusable adhesive or glue and further any suitable washable adhesive or glue. Preferably, the adhesive is a liquid polymer adhesive which spreads across and evenly covers the desired portion of the toy to form a polymer adhesive layer. Preferably, the liquid polymer adhesive is a polyurethane or a polyester, and is preferably similar in composition to U.S. Patent No. 5,102,714 to Mobley et al., which is herein incorporated by reference. Preferably liquid polymer adhesive is heat cured to form the polymer adhesive layer from the liquid polymer adhesive, similar to methods of U.S. Patent No. 6,613,382 to Lee, which is herein incorporated by reference.

[0024] Preferably, the liquid polymer adhesive is heat cured to the desired shape or form and/or heat cured onto the desired surface or area of the toy. Preferably, adhesive layer is at least about 2 mm thick. Alternatively, liquid polymer adhesive may be molded to a desired shape to form a portion of the toy itself. Once heat cured, finished adhesive layer or portion maintains a permanent tack on its exterior, exposed smooth surface. Adhesive layer or portion has a rubbery consistency with a varying degree of rigidity as is desired in the application in which it is employed. Other adhesives with similar properties from alternate vendors and other similar methods may be used.

[0025] Toy according to the present invention, with adhesive incorporated therein or therewith by integrating into disposed upon is releasably adhesive in that its exposed surface non-permanently adheres to items that the user attaches by placing, pressing, or the like, to the adhesive portion and easily releases them. Upon releasing items, adhesive portion does not lose its

adhesiveness, does not cause adhesive deposit or leave adhesive residue on the items.

[0026] Adhesive portion of a toy according to the present invention may comprise at least a portion of the toy that has been entirely formed from the adhesive itself into a three-dimensional configuration, such as a body part, i.e. torso, arm, leg, of a doll. Adhesive portion may comprise a layer disposed over at least portion of the toy, for instance, a flat surface such as a paper doll or a three dimensional surface, such as the surface of the doll's torso. Adhesive portion may be formed or disposed upon the toy by suitable means such as molding or spraying and curing directly thereon. Adhesive portion may be integrated directly into or the structure of the toy or upon its surface.

[0027] When attaching items, it requires contact of a small surface area portion of the adhesive portion to a small surface area of the item or accessory to be attached thereon to achieve sufficient adhesion for play. Additionally, the toy of the present invention is advantageous as it allows for upright toys (arranged vertically) such that the pull of gravity does not interfere with the relatively strong adhesion between surface of toy and accessory. Accessories do not fall off the toy when in upright position.

[0028] One embodiment of the present invention is shown in FIG. 1, including cutout 10, shown here with the shape of an outline of a figure, shown here as a teddy bear. Cutout 10 has an at least partially printed surface, shown here depicting a figure, specifically a teddy bear. Printed surface may include an image, photograph, depiction, or any other printed matter.

[0029] The term "cutout" as used herein means an item in at least atwo-dimensions whose edge or edges define a particular shape. Cutout may be made of paper, cardboard, plastic, wood, laminate, vinyl, polyester film or any other suitable material or combination of materials. Cutout is not limited to any shape and may include a simple shape, such as a rectangle. Cut-out may be substantially flat overall and two-dimensional or may have a raised portions and surfaces that are three-dimensional.

[0030] The term "figure" as used herein means any real or imaginary being, person, animal, such as a doll or a teddy bear, or any real or imaginary object, such as a house or bus. In the embodiment shown in Fig. 1, figure may provide the outline of the cutout and/or may provide a depiction, photograph, image or other printed matter which is disposed on the printed surface of the cutout. The depiction, photograph, image or other printed matter provided on printed surface is not limited to that of a figure.

[0031] As shown in FIG. 2, a partially printed surface 12 is at least partially covered by an adhesive 14, which may be layered, coated, or otherwise deposited or formed upon the printed surface and/or the cut-out. Preferably, the adhesive, in liquid form, is placed upon the printed surface, preferably made of polyester film, and heat cured directly thereon. Preferably, adhesive layer is at least about 2 mm thick. The adhesive layer 14 releasably adheres accessories related to the printed surface 12. Adhesive layer 14 may continuously and completely cover the partially printed surface, or it may be disposed in non-continuous, discrete patches on the printed surface. Adhesive layer 14 is at least semi-transparent or translucent, and preferably transparent, so that printed

surface 12 beneath is visible. Adhesive layer 14 may be tinted with color, or otherwise contain decorative additives, such as glitter.

[0032] Adhesive layer 14 allows items to be reattached and removed to toy or doll, over and over again. Adhesive layer 14 attaches and reattaches accessories without losing its adhesiveness. Additionally, adhesive layer 14 is washable in that it may be wetted and wiped with damp cloth, and allowed to air dry, if adhesive layer 14 becomes dirty or otherwise loses adhesiveness. Washing adhesive layer 14 in this manner and allowing it to dry restores its adhesiveness, returning to an initial stickiness. It is an advantage of the present invention to provide a reusable toy with a renewable adhesive capability so that the toy may be repeatedly played with, accessories repeatedly attached, removed and re-attached, without a loss of adhesiveness. It is a further advantage that a loss of adhesiveness due to dirt, lint or other matter attaching to the adhesive can be remedied by washing the adhesive layer 14 of the present invention and allowing it to dry.

[0033] As shown in FIGS. 1-2, cutout 10 has neither a printed surface nor an adhesive layer at its bottom portion 16. Sides 18 of the bottom portion 16 may be folded along pre-impressed lines 20 to function as a stand for cutout 30, as shown in FIG. 1. FIG. 2 is a side view of cutout 10 showing the adhesive layer 14 covering printed surface 12 of cutout 30, with shoe 22 in attached position.

[0034] The term "accessories" as defined herein means any item for placement on the cutout. Accessories may relate to each other or to the printed surface, sharing a common theme with each other and/or with the cutout.

Accessories may include, but are not limited to, clothing, shoes, bags, sports equipment, and jewelry. Accessories may relate to a particular theme, such as "dress-up", including a hat, glasses, dress, shoes and purse Accessories additionally relate to the printed surface, for instance, in the correct placement of the accessories to the printed surface (with accessories including items of clothing and printed surface depicting a figure for placement of clothing on related body parts), or in theme (accessories relating to the beach, including pail, shovel, beach umbrella, and boat, for placement on the printed surface depicting a beach and ocean scene.) Accessories may relate to learning, such as the numerals 1-10 or the letters of the alphabet, for correct ordered placement upon the cutout.

[0035] Accessories may be made of any material which is suitable to adhere to adhesive layer such as paper, cardboard, fabric, cloth, plastic, wood, metal, or any combination thereof. Accessories may be of any shape, size and/or configuration, whether flat, two or three-dimensional, which is appropriate for attachment to the toy of the present invention. It is an advantage of the present invention that many items may serve as accessories for attachment to the adhesive component of the present invention and are not limited to planar items or construction using a certain material to enable adherence to the toy. It is particularly advantageous that the high tack of the adhesive employed in the present invention allows for attachment of more sophisticated accessories, which may be relatively heavier than traditional items and/or may be three-dimensional. Accessories from other toys may be used with the toy of the present invention.

[0036] As shown in FIG. 1, accessories may include clothing and

jewelry, specifically shoes 22, swimsuit 32, glasses 34, purse 38, and necklace 36. Accessories may relate to the printed surface, and may be attached by user placing them to and gently pressing them onto adhesive layer 14 relative to the printed surface 12 of cutout 10, for instance, so as to teach children how to dress and associate items with certain areas of the body. For example, shoes 32 are placed on the feet, while glasses 34 are placed on the eyes.

[0037] A toy according to the present invention is shown in FIG. 3 including cutout 40, shown here shaped as a rectangle, having an at least partially printed surface 42 at least partially covered by a adhesive layer 44 for releasably adhering accessories 46, 47, 48. Printed surface 42 of cutout 40 may be completely covered by adhesive layer 44. Toy may include a single cutout 40 which may serve as an activity board, play-board or a page within a book, and the accessories for reliable attachment thereto by the user who places or presses accessories upon or to adhesive later 44. User may then easily pull or peel away accessories 46, 47, 48 to release them from the adhesive layer 4. User may then reattach and rearrange accessories 46, 47, 48 or attach new accessories.

[0038] While toy shown in FIGS. 1-3 is shown as including one cutout 10, in another aspect of the present invention, toy may include multiple cutouts. As shown in FIG. 4, toy may include a multiplicity of cutouts 40, 50, 60, 70 attached together to form a book. Cutout 50 has an at least partially printed surface 52. Cutout 50 may be partially covered with a adhesive layer 54 in that discrete portions of the at least partially printed surface 52 are covered by a adhesive layer 54. Releasable adherence or attachment of accessories 56, 57, 58 is achieved at these portions of adhesive layer 44 as the user places or presses accessories 46, 47, 48 upon or to adhesive layer 54. In this aspect of

the present invention, it is preferable that accessories to be adhered to portions of adhesive layer are equal or larger in size than the portion to which they attach so that the adhesive layer is not exposed so that it may adhere to other pages in the book as the pages are turned and/or when the book is closed.

[0039] In another embodiment of a toy according to the present invention, a three-dimensional figure, such as a doll, has at least one adhesive portion disposed at or formed into at least one part, such as a body part. As shown in FIG. 5, doll 100 has a first adhesive portion 114 disposed at torso 102, waist 104 and hip 106 body parts of doll 100 and a second adhesive portion 116 disposed at hand 108. Adhesive portions 114, 116 may be molded of adhesive and formed as the shape of body parts incorporated into doll 100. Alternatively, adhesive portions 114, 116 may have adhesive disposed as a coatings or layers on at least one surface, the surfaces possibly having a printed or painted display.

[0040] Doll 100 has many body parts and likewise many surfaces with different shapes, slopes, and bumps. There may be printed surfaces upon the figure. The present invention provides an easy way to attach items and accessories to a doll and prevent them from unintentionally slipping off during play, the adhesive portions 114, 166 retaining accessories thereon until the user desires to remove them.

[0041] As previously discussed with respect to adhesive layer of FIGS. 1-4, adhesive portions 114, 116 of FIGS. 5-6 allow user to place or press items to doll for attachment, and then remove them, allowing reattachment and removal over and over again. Adhesive portions 114, 116 attach and reattach accessories without losing adhesiveness. Additionally, adhesive portions 14 are washable in

that it may be wetted and wiped with damp cloth, and allowed to air dry, if adhesive portions 114, 116 become dirty or otherwise loses adhesiveness. Washing adhesive portions 114, 116 in this manner and allowing them to dry restore their adhesiveness, returning it substantially to an initial stickiness. It is an advantage of the present invention to provide a reusable three-dimensional toy, such as a doll with a renewable adhesive capability so that the toy may be repeatedly played with, accessories repeatedly attached, removed and re-attached, without a loss of adhesiveness. It is a further advantage that a loss of adhesiveness due to dirt, lint or other matter attaching to the adhesive portions can be remedied by washing the adhesive portions 114, 116 of the present invention and allowing it to dry. An ability to clean a toy, not only without ruining adhesive capability, but in fact, renewing its adhesive capability, is highly advantageous. As previously discussed, adhesive is preferably smooth.

[0042] Toy as shown in FIGS. 5-6 may include a plurality of accessories. FIG. 6 shows doll 100 after user has attached accessories by placing or pressing thereto, specifically, shirt 140, skirt 150, basket 160, and watch 170. Accessories for reliable attachment thereto by the user who places or presses accessories upon or to adhesive later 44. User may then easily pull or peel away accessories 140, 150, 160, 170 from adhesive portions 114, 116 and be able to reattach and rearrange accessories 140, 150, 160, 170 or attach new accessories.

[0043] All or some of accessories may relate to a common theme. For instance, in FIG. 6, accessories 140, 150, 170 relate to the common theme of dressing. The toy of the present invention allows children to learn how to dress, as they associate certain items of clothing to respective body parts, in a repeated fashion due to the releasable nature of the adhesive portions of the doll, while

also improving mechanical skills in the process. The attachment of accessories to adhesive portions requires children to merely place and/or press, which is much simpler than traditional snaps, buttons, hook and loop fasteners, and the like. This not only allows for a learning tool for younger children, but also expands the realm of accessories and their placement upon a doll for older children. It allows for more sophisticated, more detailed, smaller and intricate items to successfully attach and remain adhered to doll until child decides to remove them.

[0044] While the embodiment of the toy of FIGS. 5-6 has been shown as including a figure of a doll, the present invention is not limited thereto. Any two or three dimensional figure, whether a real or imaginary person, animal, or object, or portion thereof, may be employed. For instance, the figure may be a castle, and portions, such as the drawbridge, wall, windows, and moat, may be formed into, and/or have a printed surface coated with, adhesive according to the present invention. For instance, accessories, such as a rope, may be attached to a window and down the side of the castle; a person may be attached to the wall trying to climb up; and a boat may attached to the moat.

[0045] The above description is for the purpose of teaching the person of ordinary skill in the art how to practice the present invention, and it is not intended to detail all those obvious modifications and variations of it which will become apparent to the skilled worker upon reading the description. It is intended, however, that all such obvious modifications and variations be included within the scope of the present invention, which is defined by the following claims. The claims are intended to cover the claimed components and steps in

any sequence which is effective to meet the objectives there intended, unless the context specifically indicates the contrary.